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AGRICULTURAL MEMORANDUM NO 784

SWEDE MILDEW INCIDENCE RELATED TO MAXIMUM TEMPERATURES AND SOIL MOISTURE DEFICITS

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Information was received from the Plant Pathology Department at MAFF Shardlow on swede mildew incidence from 1957-67. There were three severe swede mildew years in this period 1959, 1961 and 1964. An attempt was made to relate mildew incidence to weekly maximum temperatures and soil moisture deficits for a selection of stations. The period looked at each year was Shaw weeks 34 (ending 1 July) to 43 (ending 2 September). End of month deficits were allocated to the weeks which included the last of the month and the deficits for weeks in between calculated by linear interpolation. The following calculation was applied to the data:

Highest maximum (^{o}F) + 10x assumed soil moisture deficit (ins).

It can be seen (appendix) that the occurrence of values of 120 or more for this index is a good indicator of swede mildew years although there are some discrepancies.

A summation of the amounts by which the index exceeds 120 for all weeks and stations each year shows up the bad years 1959, 1961, 1964 and also 1957.

Any comments or suggestions on this paper should be referred to the author.

Meteorological Office
Bracknell
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APPENDIX

INDEX=week's highest max (^{o}F) + 10x smd (ins)

STATION	YEAR	WEEKS WITH INDEX 120 OR ABOVE	TOTAL AMOUNT BY WHICH INDICES EXCEED 120
Rothamsted			
	1959	35, 41, 42	11
	1961	34, 38, 39, 42, 43	21
	1964	43	7
	1957	34, 35, 39, 40, 42	23
	1958	-	0
	1960	-	0
	1962	-	0
	1963	-	0
	1965	-	0
	1966	-	0
	1967	-	0
Sprowston			
	1959	35,36,37,38,39,40,41,42,43	80
	1961	34,35,38,39,42,43	40
	1964	42,43	16
	1957	34	5
	1958	-	0
	1960	-	0
	1962	-	0
	1963	-	0
	1965	-	0
	1966	-	0
	1967	39,43	4
Preston Wynne/ Ross-on-Wye	1959	35,37,38,40,41,42,43	32
	1961	43	14
	1964	40,42,43	9
	1957	34,35,39,40	22
	1958	-	0
	1960	-	0
	1962	-	0
	1963	-	0
	1965	-	0
	1966	-	0
	1967	-	0
Askham Bryan	1959	35, 38, 40, 41, 42, 43	32
	1961	43	2
	1964	40, 43	4
	1957	34	7
	1958	-	0
	1960	34	0
	1962	-	0
	1963	-	0
	1965	-	0
	1966	-	0
	1967	-	0

P.T.O.